



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,350	06/06/2005	Giuliano Cavaglia	CAVA3002/JEK	2659
23364 7590 08/29/2008 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
BHAT, NINA NMN				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
08/29/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/537,350

Applicant(s)

CAVAGLIA, GIULIANO

Examiner

N. Bhat

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62-64 and 73-122 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 62-64, 73-78, 87 and 88 is/are rejected.
- 7) ☒ Claim(s) 79-86 and 89-122 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendments and arguments of May 21, 2008 has been fully and carefully considered. Applicant's arguments are persuasive regarding the obviousness rejection over Chen in light of the amendments that the casing of the reactor is horizontally arranged whereas Chen is a vertically oriented reactor. Accordingly, the rejection made over Chen is withdrawn. Upon updating the search and in light of the amendments made by applicant a new ground of rejection necessitated by amendment will be made.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 62-64 and 73-78 and 87-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staffin et al.

Staffin et al. teach the invention substantially as claimed. Staffin et al. teach a horizontal fluidized bed reactor which is capable of operating as a reactor for solid phase continuous polymerization of PET, the reactor includes a casing, a feeding line to feed pre-polymers into the reactor, a gas lines well as appropriate valving, a charge line which is connected to the

bottom of the reactor to discharge the polymerized product, a circuit to purify the gas and to recover the gas and to recover pre-polymer and wherein the reactor includes a plurality of fluidized stages which would inherently increase the intrinsic viscosity of the PET. Specifically, Staffin et al. teach a Single shell reactor (10 which includes three compartmented separations (31A-31C), the polymer and/or catalyst are fed through feed port (58), there are includes baffles as shown in Figure 6 to accomplish a serpentine course for the fluidized polymer to flow, the fluidized bed of polymer pass from one zone to the adjacent zone as shown in Figures 2a and 2b. The polymer bed which consists of particles increase in size as the polymerization process flows through the reactor zone around each baffle and through the slots 55A, 55B, 55C in each zone dividing wall (64A, 64B, 64C). [Note Column 2, lines 31-47; Column 4, lines 8-67; Column 5, lines 11-45; Column 6, lines 51 -62]

Applicant has correctly pointed out that Staffin et al. does not teach heating the gas but teaches cooling.

Staffin teaches a reactor, an apparatus which is capable of functioning or operating as claimed by applicant. The fact that cooling is taking place as opposed to heating is a function of the heat exchanger, the structure a heat exchange device is fluid connection with the apparatus, the fact that Staffin cools as opposed to applicant's heating does not patentably distinguish between the generic teaching of Staffin of providing a reactor with heat exchange means, these means can be operated either as a heater or cooling device, to choice is up to the ordinary artisan familiar with the type of reactions taking place within the reactor, the catalyst and operating conditions and would not require any undue experimentation to one having ordinary skill in the art familiar with solid phase polymerization reactions. Staffin teaches specifically, that catalyst particles and polymer are continuously feed through the feed port (58) and (59) which feeds into the first stage 60A. The multistage arrangement in each zone i.e., stages 60A,

B, C, d of zones 31A, facilitates a narrowed residence time distribution of the fluidized particles in the particular zone, which would inherently impact the intrinsic viscosity of the polymer.

Staffin et al. teach that the fluidized bed of polymer and catalyst pass from one zone to the adjacent 3 zones as shown in Figures 2A and 2B. [Note Column 4, lines 24-63] Staffin teaches introducing the fluid gas streams to the reactor as well as recycling the off-gas stream back to the reactor. The examiner does recognize that Staffin teaches that the reaction taking place in the reactor is exothermic and requires withdrawal of heat to control the temperature of the stages within the reactor. It is the position taken by the examiner because there is a clear and specific recognition in the art to maintain temperature control within the stages of the reactor and that the reactions taking place within the reactor are exothermic requiring cooling, one having ordinary skill in the art at the time the invention was made would be able to heat instead of cooling in order to maintain the temperature between the stages for the same reasons applicant needs to cool. [Note Figure 1] In other words, the apparatus as taught and described in Staffin can operate as either a heater or cooling device, the apparatus elements would be the same, the operation is only different. [Note Column 6, lines 4-45] Staffin further teaches appropriate valving which can control the amount of fluidizing gas through the system. Staffin et al. further teach that fluidizing stages can include 3 zones and up to 12 stages. [Note Figure 1 and Column 9, lines 33-42] With respect to applicant's limitations regarding the type of gas being introduced into the reactor, this is generally not a patentable distinction when claiming apparatus claims where the apparatus has been taught to include as a gas supply for fluidization of the materials within the reactor, it does not change the structure and function of the reactor, by claiming what type of gas being enters the reactor where gas supply has been generically taught. It is maintained that applicant's invention is rendered obvious as whole from the teachings of Staffin.

5. Claims 79-86 and 89-122 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Bhat/
Primary Examiner, Art Unit 1797